KVR16LR11S4/4I

4GB 1Rx4 512M x 72-Bit PC3L-12800
CL11 Registered w/Parity 240-Pin DIMM

DESCRIPTION

This document describes ValueRAM's 512M x 72-bit (4GB) DDR3L-1600 CL11 SDRAM (Synchronous DRAM), low voltage, registered w/parity, 1Rx4 ECC, Intel® Compatibility Tested, memory module, based on eighteen 512M x 4-bit FBGA components. The SPD is programmed to JEDEC standard latency DDR3-1600 timing of 11-11-11 at 1.35V and 1.5V. This 240-pin DIMM uses gold contact fingers. The electrical and mechanical specifications are as follows:

FEATURES

- JEDEC standard 1.35V (1.28V ~ 1.45V) and 1.5V (1.425V ~ 1.575V) Power Supply
- VDDQ = 1.35V (1.28V ~ 1.45V) and 1.5V (1.425V ~ 1.575V)
- 800MHz fCK for 1600Mb/sec/pin
- 8 independent internal bank
- Programmable CAS Latency: 11, 10, 9, 8, 7, 6
- Programmable Additive Latency: 0, CL - 2, or CL - 1 clock
- 8-bit pre-fetch
- Burst Length: 8 (Interleave without any limit, sequential with starting address “000” only), 4 with tCCD = 4 which does not allow seamless read or write [either on the fly using A12 or MRS]
- Bi-directional Differential Data Strobe
- Internal(self) calibration : Internal self calibration through ZQ pin (RZQ : 240 ohm ± 1%)
- On Die Termination using ODT pin
- On-DIMM thermal sensor (Grade B)
- Average Refresh Period 7.8us at lower than TCASE 85°C, 3.9us at 85°C < TCASE ≤ 95°C
- Asynchronous Reset
- PCB : Height 1.180” (30.00mm), double sided component

SPECIFICATIONS

CL(IDD)	11 cycles
Row Cycle Time (tRCmin)	48.125ns (min.)
Refresh to Active/Refresh Command Time (tRFCmin)	160ns (min.)
Row Active Time (tRASmin)	35ns (min.)
Maximum Operating Power	(1.35V) = 5.478 W* (1.50V) = 3.947 W*
UL Rating	94 V - 0
Operating Temperature	0° C to 85° C
Storage Temperature	-55° C to +100° C

*Power will vary depending on the SDRAM and Register/PLL used.

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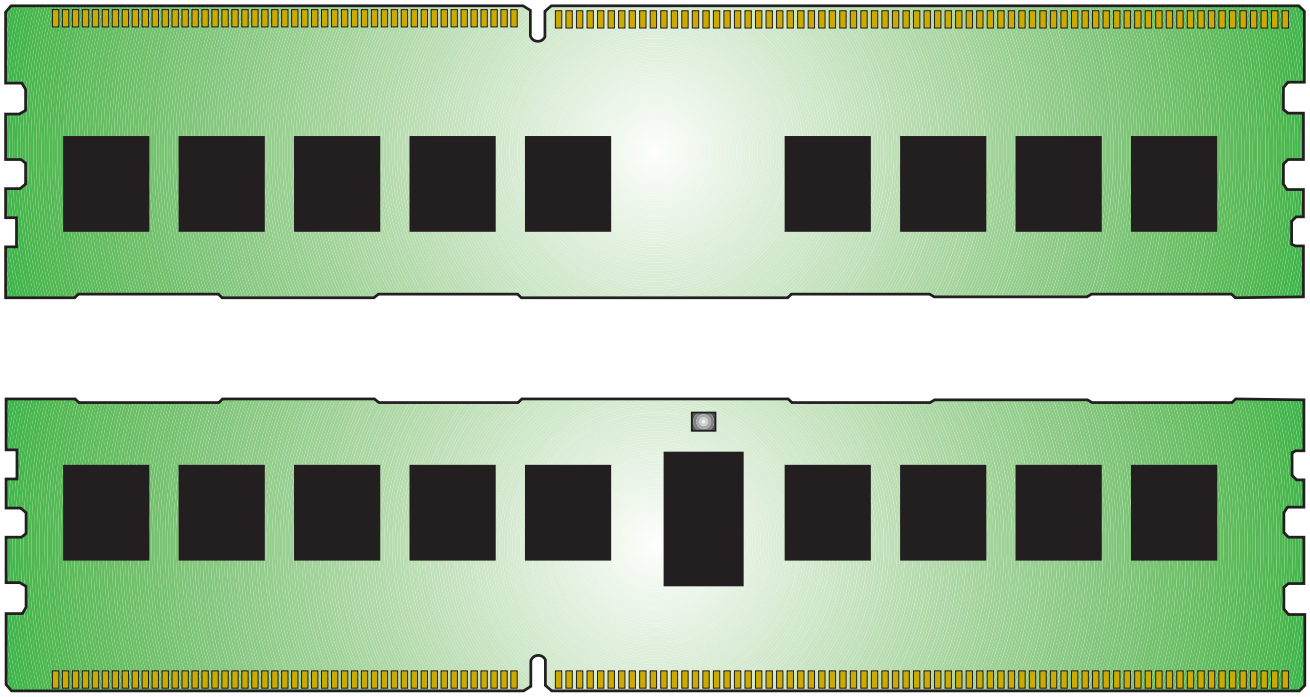
MODULE DIMENSIONS:



(units = millimeters)